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LISTS OF SPECIES

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Floristic survey of the Brazilian Ages Memorial: a Cerrado *sensu stricto* area with an educational relevance

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Abstract: The Cerrado Biome is currently classified as one of the most diverse savannas in the world. The anthropic destruction of this biome led the Cerrado to be recognized as one of the world's hot spots for bioconservation. Cerrado *sensu stricto* phytophysiognomy represents 70% of the original Cerrado biome surface and floristic surveys are basic and important studies for conservation initiatives in these areas. Our survey area is a Cerrado *sensu stricto* of 6 ha attached to the Brazilian Ages Memorial, an open air museum located in Distrito Federal, in the center of the Cerrado biome. Our list counted 222 species of angiosperms, with the families Asteraceae, Fabaceae, Malpighiaceae and Myrtaceae being the richest ones. Our work contributes towards a better understanding of the Cerrado biome and also may help future educational programs in the museum.

Key words: Distrito Federal, museum, cerrado

INTRODUCTION

The Cerrado biome in Brazil is currently classified among the savannas with highest biodiversity in the world, with an estimate in excess of 12,000 angiosperms species (Mendonça et al. 2008). Furthermore, it is also significant in terms of its large surface area, having originally covered 21% of Brazilian territory (Aguiar et al. 2004) and for including parts of the three largest hydrological systems of South America in its area (Alho and Martins 1995; Klink 1996).

One of the most remarkable characteristics of the Cerrado vegetation is the great variety of phytophysiognomies, which are represented by a diversity of forests, savannas and meadows (Ribeiro and Walter 2008). Among the savannas phytophysiognomy, the Cerrado *sensu stricto* is the most common, occurring in almost 70% of the biome (Eiten 1972).

According to Riberio and Walter (2008), the main characteristics of Cerrado *sensu stricto* are a defined layer of trees and shrubs, covering between 10% to 60%, and an herbaceous layer approximately 60 cm high. The high species number of this phytophysiognomy is represented by a great diversity of herbs, subshrubs and shrubs mainly represented by the families Fabaceae, Rubiaceae, Myrtaceae and Asteraceae (Ratter 1997). The destruction of Cerrado *sensu stricto* areas, which has seen more than 50% of its area lost or degraded, has resulted in the Brazilian cerrado being recognized as one of the world hotspots for bioconservation (Felfili and Silva Junior 2001).

The Distrito Federal of Brazil (DF) is located in the center of the Cerrado biome (Figure 1) and has suffered from increasing exploitation of its natural resources.

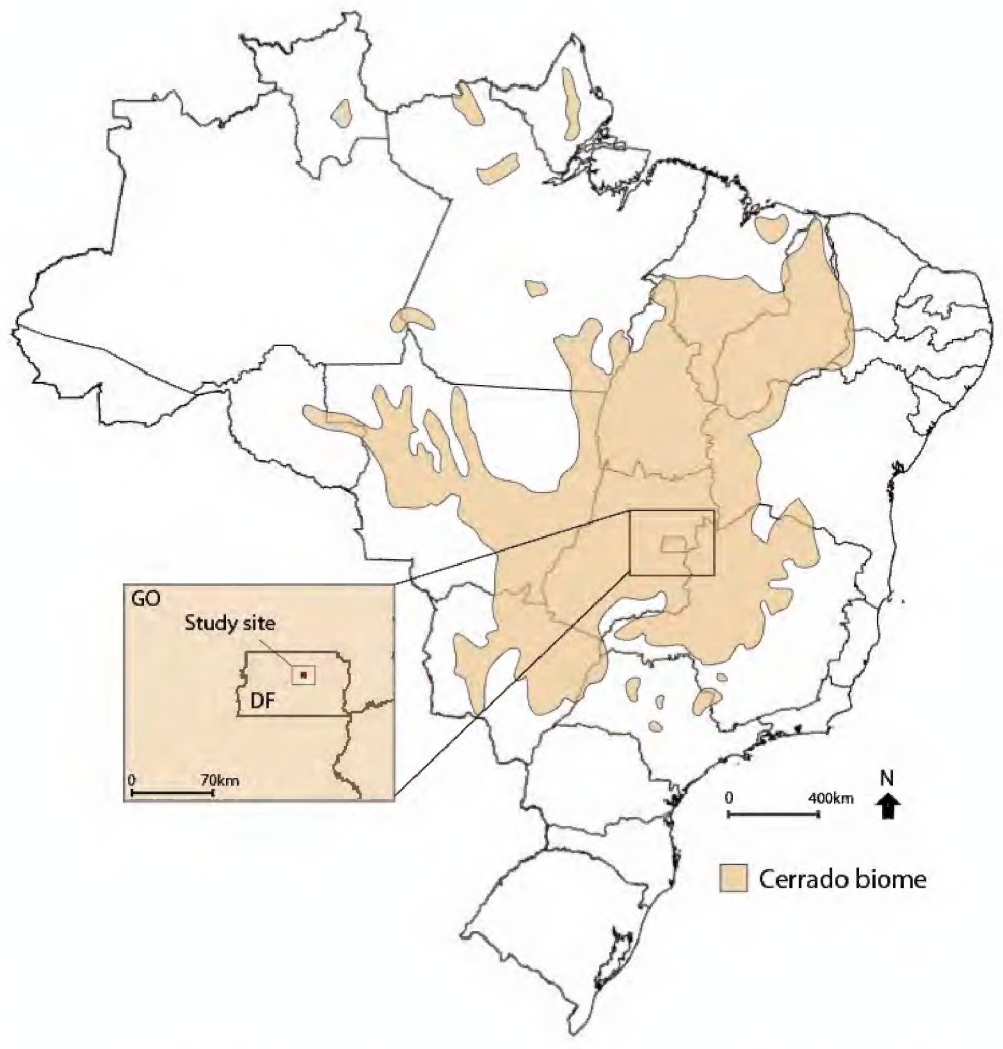

Figure 1. The original area of Cerrado Biome in Brazil (based on Ratter et al. 1997) and the study site location within the biome. DF: Distrito Federal, GO: Goiás state.

After 44 years of occupation, 73.8% of its original Cerrado has already been lost (Felfili 2000). Conservation areas represent 42% of the DF area, but many of these have already been invaded by illegal occupation which has led to biodiversity loss and to the contamination and siltation of rivers (Felfili 2000).

In general, the Cerrado fragmentation has reinforced the importance of creating new conservation areas and, particularly, in preserving the areas that already exist. Knowledge of the Cerrado flora in the Distrito Federal is a significant step in planning and selecting new representative areas of the biome that will be prioritized for conservation and recovery (Felfili et al. 1993; Mendonça et al. 2008). Therefore, works like this are very useful towards a better understanding of areas where limited information is available. In addition to that, floristic surveys are a tool to improve herbarium collections, which then will constitute the basis of studies in taxonomy, biogeography and ecology.

MATERIALS AND METHODS

Study site

The Brazilian Ages Memorial (in Portuguese "Memorial das Idades do Brasil") is a privately owned open air museum locate at 15°77′ S, 047°80′ W, on the boundary of Paranoá city, Distrito Federal, Brazil. The area is a memorial about the ancient people who inhabited the region of the central Brazilian highlands and is frequently visited by school groups.

According to the official website (http://www.paulobertran.com.br), the area was given this name because it represents the "three ages" of the central highlands formation. The first age is the "geological age", represented by the rocks and stones, some of them up to 1 billion years old and originally under the Pangean sea. The second is the "anthropological age", represented by reproductions of ancient cave paintings made by local artists (Figure 2). The third age is the "plant age", represented by the trails through the area of Cerrado *sensu stricto* in which the survey was done.

Figure 2. Cave painting reproductions from the site.

Figure 3. Aerial view of the Brazilian Ages Memorial and region on Google Earth™. a) Area in which our floristic survey was done; b) Brazilian Ages Memorial museum; c) *Pinus* sp. plantation.; d) Paranoá Lake.

The site of study is a Cerrado *sensu stricto* located at an altitude of 1,050 m with approximately 6 ha attached to the Brazilian Ages Memorial Museum. The site is close to a large plantation of *Pinus* sp. which has already started to invade the area's native vegetation via seed dispersal (Figure 3).

Data collection

Our species list was mostly defined by weekly collections over a period of a year, from May 2009 to May 2010. Collections made by the Ethnobotany course of the University of Brasilia, conducted by Prof. Carolyn E. B. Proença in 2009, were also included in our survey. Some sporadic collections made in the following years were also considered. The collections were made mainly next to the trails and fertile plants with buds, flowers and fruits were prioritized. Some characteristics of the plants, such as color, scent and latex were also recorded and are available in BRAHMS at the University of Brasilia Herbarium (UB).

The species identification was mostly made by comparison with dry specimens in the UB herbarium. In some cases, species were also identified using specialized keys, literature, and consulting taxonomists. The collected material was incorporated into the UB collection.

Synonyms follow the classification listed on the Flora do Brasil website (Lista de Espécies da Flora do Brasil, consulted in 2015), for it presents the most up to date classification of plants in Brazil. The family classification system follows the Angiosperm Phylogeny Group III (APG III 2009). Classification of the species as native or invasive was the same as used by Mendonça et al. (2008). Information of habit (i.e., shrub, tree) was also taken from the "Espécies da Flora do Brasil" website (consulted in 2015) and from Mendonça et al.(2008).

RESULTS

Our floristic survey counted 222 species of angiosperms, representing 148 genera and 59 families,

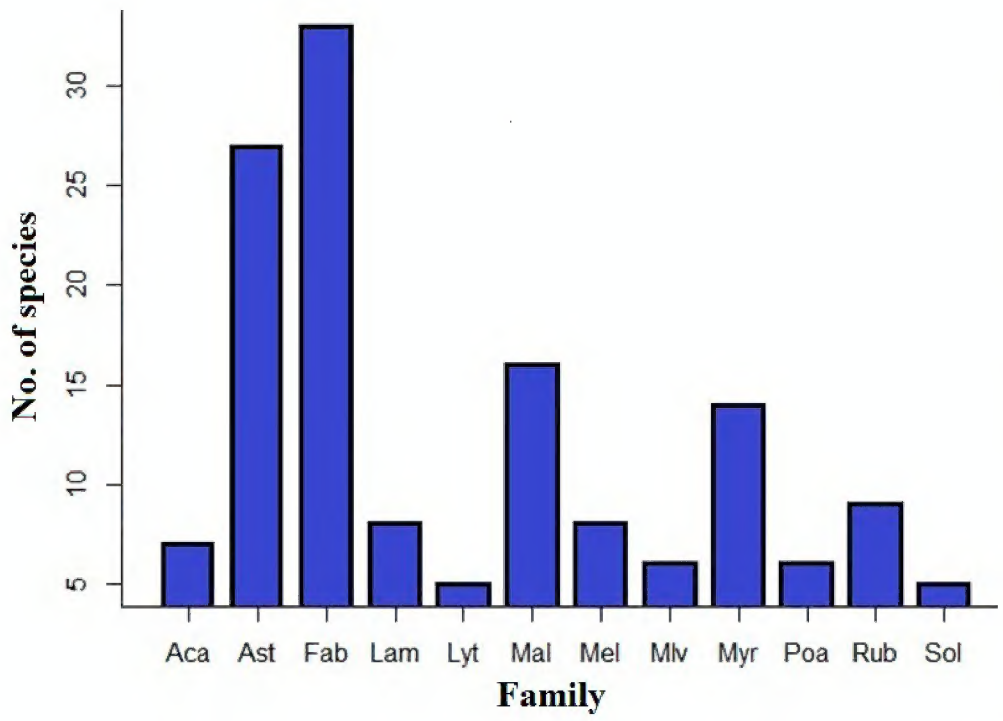

Figure 4. Families with the number of species in the Brazilian Ages Memorial. Aca = Acanthaceae; Ast = Asteraceae; Fab = Fabaceae; Lam = Lamiaceae; Lyt = Lythraceae; Mal = Malpighiaceae; Mel = Melastomataceae; Mlv = Malvaceae; Myr = Myrtaceae; Poa = Poaceae; Rub = Rubiaceae; Sol = Solanaceae.

of which 50 are eudicots, 8 are monocots, and one is a magnoliid (Annonaceae). The complete species list, with collection number, habit, category (if endemic or invasive) is presented in Table 1.

Family with the largest species number in the area was Fabaceae (represented by 32 species), followed by Asteraceae (27 species), Malpighiaceae (16 species), Myrtaceae (13 species), Rubiaceae (9 species), Melastomataceae and Lamiaceae (8 species each), Acanthaceae (7 species), Poaceae and Malvaceae (6 species each), Lythraceae and Solanaceae (5 species each) (Figure 4).

Among the genera, the richest in species number were *Banisteriopsis* (Malpighiaceae) with seven species, *Chamaecrista* (Fabaceae), *Eugenia* (Myrtaceae) and *Miconia* (Melastomataceae) with six species each, *Byrsonima* (Malpighiaceae), *Hyptis* (Lamiaceae) and *Myrcia* (Myrtaceae) with five species each, and *Mimosa* (Fabaceae) represented by four species.

DISCUSSION

The high diversity of Asteraceae and Fabaceae species was expected since these are among those families considered hyperdiverse in Brazil (Rapini et al. 2009). They also appear as the two most diverse species of eudicots in other surveys in similar areas of Cerrado (Carvalho et al. 2010; Ishara and Rodela 2012).

The families Poaceae and Cyperaceae usually are represented by a high species number in Cerrado *sensu stricto* environments (Ratter et al. 1997). In our study, however, we found only three species of Cyperaceae and six of Poaceae, a number abnormally low. This result can be explained by either (1) the families were poorly sampled or (2) because the site is small and well-cared for, there was no sign of recent fire in the area. Amaral et al. 2013, by analyzing an area of Cerrado also in Distrito Federal, found that the absence of fire in Cerrado leads to an increasing in the number of woody species and a decreasing in the number of herbaceous plants, such as grasses, what could explain the little diversity of these families in the area.

Myrtaceae and Malpighiaceae families, the third and fourth most diverse families in our survey, also appear in similar studies between the most diverse families in Cerrado *sensu stricto* areas (Carvalho et al. 2010; Ishara and Rodela 2012) confirming the great ecological importance of these two families in the biome.

Among the listed species, *Anemopaegma arvense* (Bignoniaceae) is cited as endangered by Martinelli and Moraes (2013). *Caryocar brasiliense* (Caryocaraceae) is cited in the same literature as a species with commercial value undergoing distribution decline. These threatened species are concerning as the area has already been invaded by individuals of *Pinus* sp. Furthermore, six species are not cited in the books of the Flora do Distrito Federal (Cavalcanti et al. Vols. 1 to 10, from 2001 to 2012) nor in the Flora do Brasil website for Distrito Federal (Lista de Espécies da Flora do Brasil, consulted in 2015) (Table 1), highlighting that the flora of DF, although confined to small preserved areas, requires additional study.

Our study concludes that the Brazilian Ages Memorial, while not a conservation area, is an area of ecological relevance to the Distrito Federal. The area is rich in native species of Cerrado *sensu stricto* vegetation, which in turn attracts species of fauna associated with this kind of vegetation. Furthermore, it is an area suitable for new studies that will contribute to its management and conservation. This list can also be used for ethnobotanical studies in order to make the link between the "anthropological age" and "plant age" at the museum. Additionally, it will improve the educational purposes of the Memorial of Brazilian Ages.

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Table 1. List of families and species of angiosperms from Memorial das Idades do Brasil, Federal District, Brazil, with their vouchers (UB), collectors (name and number), habit, categories and citation on the Flora do Distrito Federal. Collector: TN = T.N.C.Vasconcelos; MLI= M.L. Ianhez; CP= C.E.B. Proença. Habit: Tre: tree; Smt: small tree; Shr: Shrub; Ssh: subshrub; Her: herb; Lia: liana; Cre: creeper. Category. ECe: endemic to the Cerrado; eGO: endemic to Goiás state. Thr: threatened; Inv: invasive. N = species not cited in the Flora do Distrito Federal books. * species observed in the study site, but not collected.

Family/Species, Author	Voucher	Collector	Habit	Category	Flora DF
Acanthaceae					
Justicia chrysotrichoma (Nees) Benth.	109229; 121092	MLI 97; CP 3611	Her — Ssh	ECe, eGO	
Justicia lanstyakii Rizzini	106714; 119026	MLI 23; TN 37	Ssh	ECe	
Justicia sarothroides Lindau	106686	TN 81	Ssh	ECe, eGO	
Lepidagathis cyanea (Leonard) Kameyama	84580; 109225; 121088	TN 10; MLI 93; CP 3607a	Her	ECe	
Ruellia hapalotricha Lindau	119017; 109239; 109274	TN 28; MLI 110; TN 102	Her	ECe, eGO	
Ruellia incomta (Nees) Lindau	126544	MRL 21	Ssh	ECe	
Ruellia nitens (Nees) Wassh.	126545	MRL 22	Ssh	—	
Amaranthaceae					
Alternanthera brasiliana (L.) Kuntze	106674	TN 69	Her	—	
Anacardiaceae					
Anacardium humile A.St.-Hil.	106676; 106741	TN 71; MLI 50	Shr	—	
Annonaceae					
Annona crassiflora Mart.	165336	TN 126	Tre	—	
Annona monticola Mart.	165342	TN 132	Shr	—	
Duguetia furfuracea (A.St.-Hil.) Saff.	82020; 119028	CP 3571; TN 39	Shr	—	
Duguetia marcgraviana Mart.	106726	MLI 35	Tre	—	N
Apocynaceae					
Aspidosperma macrocarpon Mart.	82019	CP 3570	Tre	—	
Hancornia speciosa Gomes	82025; 106690	CP 3576; TN 85	Tre	—	
Himatanthus obovatus (Müll.Arg.) Woodson	82043	CP 3594	Tre	ECe	
Odontadenia lutea (Vell.) Markgr.	106734; 109259	MLI 43;	Cre	—	
Araliaceae					
Schefflera macrocarpa (Cham. & Schltdl.) Frodin	109255	MLI 126	Tre	—	
Arecaceae					
Syagrus flexuosa (Mart.) Becc.	109262	TN 90	Shr	—	
Asteraceae					
Achyrocline satureioides (Lam.) DC.	119055	TN 66	Her	—	
Aldama robusta (Gardner) E.E. Schill & Panero	121084	TN 116	Ssh		
Ageratum conyzoides L.	119056	MLI 58	Her	Inv	
Aspilia foliacea (Spreng.) Baker	82027	CP 3578	Her	—	
Baccharis reticularia DC.	119031	TN 42	Shr	—	
Bidens pilosa L.	109276	TN 104	Her	Inv	
Calea quadrifolia Pruski & Urbatsch	109266	TN 94	Ssh	ECe, eGO	
Calea sickii (G.M.Barroso) Urbatsch et al.	84597	TN 27	Ssh	ECe, eGO	
Chresta curumbensis (Philipson) H.Rob.	106736	MLI 45	Her	ECe	
Chresta exsucca DC.	119020; 119035	TN 31; TN 46	Her	ECe	
Chromolaena chaseae (B.L.Rob.) R.M.King & H.Rob.	109251	MLI 122	Ssh	ECe	
Dimerostemma vestitum (Baker) S.F.Blake	109204	MLI 72	Ssh	ECe	
Echinocoryne holosericea (Mart. ex DC.) H.Rob.	106708; 118997; 119012	MLI 18; TN 8; TN 23	Shr	ECe	
Elephantopus biflorus (Less.) Sch.Bip.	119042	TN 53	Ssh	—	
Eremanthus glomeratus Less.	119123	MLI 108	Tre	ECe	
Eremanthus goyazensis (Gardner) Sch.Bip.	84594; 109279	TN 24; TN 107	Smt	ECe	
Eremanthus mollis Sch.Bip.	109246	MLI 117	—	ECe	
Ichthyothere latifolia Baker	106748	MLI 57	Ssh	ECe	
Lepidaploa aurea (Mart. ex DC.) H.Rob.	106683; 106729; 106737	TN 78; MLI 38; MLI 46	Ssh	—	
Lepidaploa rufogrisea (A.St.-Hil.) H.Rob.	119048	TN 59	Shr	ECe	
Lessingianthus durus (Mart. ex DC.) H.Rob.	119047	TN 58	Ssh	ECe	
Lessingianthus floccosus (Gardner) H.Rob.	119054	TN 65	Shr	ECe	
Piptocarpha sp.	—	TN 96	NA	—	
Strophopappus glomerulatus (Gardner) R.Esteves	121100	CP 3619	Ssh	?	
Trichogonia salviifolia Gardner	109222	MLI 90	Her	—	
Vernonia cf. rubriramea	84585	TN 15	Shr		
Vernonia rubriramea Mart. ex DC.	121093	CP 3612	Shr	?	
Bignoniaceae					
Anemopaegma arvense (Vell.) Stellfeld ex de Souza	106701	MLI 11	Ssh	—	
Cuspidaria sceptrum (Cham.) L.G.Lohman	84579; 119046; 109258	TN 9; TN 57; TN 86	Shr	ECe	

Continued

Table 1. *Continued.*

Family/Species, Author	Voucher	Collector	Habit	Category Flora DF
Jacaranda ulei Bureau & K.Schum.	82033; 106707; 119041	CP 3584; MLI 17; TN 52	Shr	ECe
Zeyheria montana Mart.	119043; 109280	TN 54; TN 108	Shr — Smt	—
Bixaceae				
Cochlospermum regium (Mart. ex Schrank) Pilg.	106715	MLI 24	Shr	—
Boraginaceae				
Euploca salicoides (Cham.) J.I.M.Melo & Semir	106718	MLI 27	Her — Ssh	?
Bromeliaceae				
Dyckia brasiliana L.B.Sm.	84582	TN 12	Her	ECe, eGO
Burseraceae				
Protium ovatum Engl.	82034; 106675; 106702	CP 3585; TN 70; MLI 12	Shr	ECe
Calophyllaceae				
Kielmeyera coriacea Mart. & Zucc.	106724	MLI 33	Tre	—
Kielmeyera rubriflora Cambess.	84600	TN 30	Shr	ECe
Kielmeyera speciosa A.St.-Hil.	109264; 109284; 121094	TN 92; TN 112; CP 3613	Tre	ECe
Caryocaraceae				
Caryocar brasiliense Cambess.	82041	CP 3592	Tre	—
Celastraceae				
Plenckia populnea Reissek	165340	TN 130	Tre	—
Salacia crassifolia (Mart. ex Schult.) G.Don	82031	CP 3582	Shr – Smt	—
Combretaceae				
Terminalia fagifolia Mart.	109200	MLI 68	Tre	—
Connaraceae				
Connarus suberosus Planch.	106684; 106727; 109206	TN 79; MLI 36; MLI 74	Shr	ECe
Convolvulaceae				
Merremia tomentosa (Choisy) Hallier f.	84573; 84596; 109195	TN 3; TN 26; MLI 63	Ssh	ECe
Cucurbitaceae				
Melothria campestris (Naudin) H. Schaef. & S.S. Renner	—	*	NA	
Perianthopodus sp.	82038	CP 3589	NA	—
Cyperaceae				
Bulbostylis jacobinae (Steud.) Lindm.	109215	MLI 83	Her	—
Rhynchospora consanguinea (Kunth) Boeckeler	106709	MLI 19	Her	—
Rhynchospora exaltata Kunth	84587	TN 17	Her	—
Dilleniaceae				
Davilla elliptica A.St.-Hil.	106746; 109287	MLI 55; TN 115	Shr	—
Ebenaceae				
Diospyros hispida A.DC.	82026; 109286; 121015; 165337165335	CP 3577; T 114; MLI 78; TN 127; TN 125	Tre	—
Eriocaulaceae				
Paepalanthus sp.	—	MLI 78	NA	—
Erythroxylaceae				
Erythroxylum deciduum A.St.-Hil.	82044	CP 3595	Ter – Smt	—
Erythroxylum suberosum A.St.-Hil.	109193; 109197	MLI 61; MLI 65	Smt	—
Euphorbiaceae				
Croton campestris A.St.-Hil.	109205	MLI 73	Shr	—
Dalechampia caperonioides Baill.	106700	MLI 10	Her	ECe
Manihot anomala Pohl	106740	MLI 49	Shr	—
Maprounea guianensis Aubl.	106747; 109263	MLI 56; TN 91	Tre	ECe
Fabaceae				
Aeschynomene paucifolia Vogel	106688	TN 83	Her — Ssh	ECe
Anadenanthera colubrina (Vell.) Brenan	165353	TN 143	Tre	
Ancistrotropis firmula (Mart. ex Benth.) A.Delgado	109249; 109283	MLI 120; TN 111	Shr — Cre	
Bauhinia dumosa Benth.	165348	TN 138	Ssh	ECe
Bauhinia rufa (Bong.) Steud.	119029; 119038	TN 40; TN 49	Ssh	ECe
Calliandra dysantha Benth.	82037; 119027	CP 3588; TN 38	Ssh — Shr	—
Chamaecrista basifolia (Vogel) H.S.Irwin & Barneby	109226	MLI 94	Ssh	ECe
Chamaecrista benthamiana (Harms) H.S.Irwin & Barneby	106679	TN74	Ssh — Shr	ECe, eGO
Chamaecrista clausseni (Benth.) H.S.Irwin & Barneby	11936; 106680	TN 47; TN 75	Ssh	ECe
Chamaecrista conferta (Benth.) H.S.Irwin & Barneby	106696	MLI 6	Ssh	—
Chamaecrista desvauxii (Collad.) Killip	109227; 109233; 109267	MLI 95; MLI 102; TN 95	Shr	—
Chamaecrista filicifolia (Benth.) H.S.Irwin & Barneby	109245	MLI 116	Ssh	—
Crotalaria flavicoma Benth.	109236	MLI 106	Her — Ssh	—

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Table 1. *Continued.*

Family/Species, Author	Voucher	Collector	Habit	Category	Flora DF
Dalbergia miscolobium Benth.	109269	TN 97	Tre	—	
Dimorphandra mollis Benth.	109209; 119039	MLI 77; TN 50	Tre	—	
Enterolobium gummiferum (Mart.) J.F.Macbr.	165343	TN 133	Tre	ECe	
Eriosema glaziovii Harms	109196	MLI 64	Her	ECe, eGO	
Galactia heringeri Burkart	109234	MLI 103	Her	—	
Galactia peduncularis (Benth.) Taub.	82017; 106692; 109252	CP 3568; MLI 2b; MLI 123	Her	ECe	
Hymenaea stigonocarpa Mart. ex Hayne	165341	TN 131	Tre	—	
Leptolobium dasycarpum Vogel	82023	CP 3574	Tre – Smt	—	
Macroptilium sp.	119135	MLI 120b	NA	—	
Mimosa albolanata Taub.	84599; 119030	TN 29; TN 41	Shr	ECe	
Mimosa debilis Humb. & Bonpl. ex Willd.	106730	MLI 39	Her — Ssh	—	
Mimosa lanuginosa Glaz. ex Burkart	119021; 119034	TN 32; TN 45	Ssh	—	
Mimosa somnians Humb. & Bonpl. ex Willd.	121097	CP 3616	Shr	—	
Periandra mediterranea (Vell.) Taub.	84571; 109221; 121102	TN 1; MLI 89; CP 3621	Ssh — Shr	—	
Pterodon emarginatus Vogel	165352	TN 142	Tre	—	
Senna rugosa (G.Don) H.S.Irwin & Barneby	84576; 109275; 121091	TN 6; TN 103; CP 3610a	Shr	—	
Stryphnodendron adstringens (Mart.) Coville	165338	TN 128	Tre	—	
Stylosantes guianensis (Aubl.) Sw.	109238	MLI 109	Her	ECe	
Tachigali vulgaris L.G.Silva & H.C.Lima	119040	TN 51	Tre	—	
Gentianaceae					
Deianira chiquitana Herzog	165349	TN 139	Ssh	—	
Iridaceae					
Alophia drummondii (Grah.) R.C.Foster	109194	MLI 62	?	?	N
Sisyrinchium vaginatum Spreng.	121101	CP 3620	Her	—	
Trimezia juncifolia (Klatt) Benth. & Hook.	109231	MLI 99	Her	—	
Lamiaceae					
Aegiphila verticillata Vell.	82045; 165344	CP 3596; TN 134	Shr — Tre	—	
Hypenia macrantha (A.St.-Hil. ex Benth.) Harley	109253; 119051	MLI 124; TN 62	Ssh	—	
Hyptis conferta Pohl ex Benth.	109232	MLI 100	Shr	—	
Hyptis rubiginosa Benth.	106704; 119050	MLI 14; TN 61	Ssh	ECe	
Hyptis villosa Pohl ex Benth.	119033	TN 44	Her	ECe	
Medusantha crinita (Benth.) Harley & J.F.B.Pastore	119049	TN 60	Ssh	ECe	
Oocephalus lytroides (Pohl ex Benth.) Harley & J.F.B.Pastore	84592	TN 22	Ssh	ECe, eGO	
Salvia tomentella Pohl	109203	MLI 71	Her	—	
Loganiaceae					
Strychnos pseudoquina A.St.-Hil.	82022	CP 3573	Tre	—	
Lythraceae					
Cuphea ferruginea Pohl ex Koehne	109201	MLI 69	Ssh	ECe, eGO	
Cuphea spermacoce A.St.-Hil.	106711	MLI 21	Ssh	ECe, eGO	
Diplusodon rosmarinifolius A.St.-Hil.	119037; 119044	TN 48; TN 55	Ssh	ECe, eGO	
Diplusodon sessiliflorus Koehne	121099	CP 3618	Ssh	ECe, eGO	
Lafoensia pacari A.St.-Hil.	109242	MLI 113	Tre	—	
Malpighiaceae					
Banisteriopsis argyrophylla (A.Juss.) B.Gates	109268	TN 96	Shr — Cre	ECe	
Banisteriopsis campestris (A.Juss.) Little	106732; 109235	MLI 41; MLI 104	Shr	—	
Banisteriopsis laevifolia (A.Juss.) B.Gates	109243	MLI 114	Shr — Cre	ECe	
Banisteriopsis latifolia (A.Juss.) B.Gates	121096	CP 3615	Smt	ECe, eGO	
Banisteriopsis malifolia (Nees & Mart.) B.Gates	84591; 121098	TN 21; CP 3617	Shr	—	
Banisteriopsis megaphylla (A.Juss.) B.Gates	106681; 109265; 109248	TN 76; TN 93; MLI 119	Shr	ECe	
Banisteriopsis sp.	84595; 109247	TN 25; MLI 118	NA	—	
Byrsonima basiloba A.Juss.	109223; 119032	MLI 91; TN 43	Ssh	ECe	
Byrsonima coccolobifolia Kunth	82018; 106728	CP 3569; MLI 37	Tre	—	
Byrsonima guilleminiana A.Juss.	82028; 119022; 106689	CP 3579; TN 33; TN 84	Shr	ECe	
Byrsonima rotunda Griseb.	109248	MLI 119	—	—	
Byrsonima sp.	119045; 109277	TN 56; TN 105	NA	—	
Camarea affinis A.St.-Hil.	109220	MLI 88	Ssh	ECe	
Peixotoa cordistipula A.Juss.	109250	MLI 121	Ssh	ECe	N
Peixotoa goiana C.E.Anderson	84586	TN 16	Ssh	ECe, eGO	
Pterandra pyroidea A.Juss.	106698	MLI 8	Ssh	ECe	

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Table 1. *Continued.*

Family/Species, Author	Voucher	Collector	Habit	Category	Flora DF
Malvaceae					
Eriotheca pubescens (Mart. & Zucc.) Schott & Endl.	109257	MLI 128	Shr — Tre	ECe	
Pavonia pohlii Gürke	84577; 84584; 109260	TN 7; TN 14; TN 88	Ssh	ECe, eGO	
Sida cerradoensis Krap.	109207	MLI 75	Ssh — Shr	—	
Sida linifolia Cav.	106723	MLI 32	Her	Inv	
Sida santaremensis Mont.	109278	TN 106	Her — Ssh	Inv	
Waltheria indica L.	109230	MLI 98	Ssh	Inv	
Melastomataceae					
Miconia albicans (Sw.) Triana	—	*	Smt	—	
Miconia burchellii Triana	—	*	Tre	ECe	
Miconia fallax DC.	84590; 106703	TN 20; MLI 13	Smt	—	
Miconia ferruginata DC.	119025; 119052	TN 36; TN 63	Tre	—	
Miconia pohliana Cogn.	106743	MLI 52	Tre		
Miconia rubiginosa (Bonpl.) DC.	106714	MLI 23	Shr	—	
Tibouchina aegopogon Cogn.	109240	MLI 111	Ssh	ECe	
Tibouchina laevicaulis Wurdack	84572; 109282; 106745	TN 2; TN 110; MLI 54	Shr	ECe, eGO	
Menispermaceae					
Cissampelos ovalifolia DC.	106706	MLI 16	Ssh	—	
Moraceae					
Brosimum gaudichaudii Trécul	82040; 106721	CP 3591; MLI 30	Shr — Tre	—	
Myrtaceae					
Campomanesia pubescens (Mart. ex DC.) O.Berg	82032	CP 3583	Shr	—	
Eugenia angustissima O.Berg	82015; 106725	CP 3566; MLI 34	Ssh	—	
Eugenia bimarginata DC.	106678	TN 73	Tre	—	
Eugenia dysenterica (Mart.) DC.	82039	CP 3590	Tre	—	
Eugenia involucrata DC.	82036	CP 3587	Shr — Tre	—	
Eugenia paranahybensis O.Berg	106722	MLI 31	Ssh	ECe	N
Eugenia punicifolia (Kunth) DC.	106699	MLI 9	Shr	—	
Myrcia goyazensis Cambess.	106687	TN 82	Shr	ECe	
Myrcia guianensis (Aubl.) DC.	106673; 106695; 109192	MLI 5, MLI 60, TN 68	Shr	—	
Myrcia nivea Cambess.	106685	TN 80	Shr	ECe	
Myrcia variabilis Mart. ex DC.	106731	MLI 40	Ssh	—	
Psidium firmum O.Berg	106682; 106720	TN 77; MLI 29	Shr	—	
Psidium laruotteanum Cambess.	109285	TN 113	Shr	—	
Nyctaginaceae					
Guapira noxia (Netto) Lundell	165350	TN 140	Tre	ECe	
Guapira psammophila (Mart. ex J.A.Schmidt) Angely.	109241	MLI 112	?	?	N
Ochnaceae					
Ouratea floribunda (A.St.-Hil.) Engl.	165345	TN 135	Ssh — Shr	ECe	
Ouratea hexasperma (A.St.-Hil.) Baill.	84589; 109256	TN 19; MLI 127	Shr – small tree	ECe	
Orchidaceae					
Cyrtopodium sp.	165356	TN 146	NA	—	
Orobanchaceae					
Buchnera lavandulacea Cham. & Schltdl.	106677	TN 72	Her	—	
Buchnera rosea Kunth	109254	MLI 125	Her	—	
Oxalidaceae					
Oxalis barrelieri L.	109191	MLI 59	Her — Ssh	Inv	
Poaceae					
Aristida setifolia Kunth	119053	TN 64	Her	—	
Axonopus aureus P.Beauv.	119024	TN 35	Her	—	
Axonopus pressus (Sw.) P.Beauv.	152130	MLI 89b	Her	—	
Ichnanthus inconstans (Trin. ex Nees) Döll	106738	MLI 47	Her	—	
Paspalum eucomum Nees ex Trin.	121090	CP 3609a	Her	ECe	
Urochloa decumbens (Stapf) R.D.Webster	152131	MLI 93b	Her	Inv	
Primulaceae					
Cybianthus densiflorus Miq.	109244	MLI 115	Shr	—	
Cybianthus detergens Mart.	82013; 106697; 106712	CP 3564; MLI 7; MLI 22	Shr	—	
Myrsine guianensis (Aubl.) Kuntze	109202	MLI 70	Tre	—	
Proteaceae					
Roupala montana Aubl.	106733	MLI 42	Tre	—	

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Table 1. *Continued.*

Family/Species, Author	Voucher	Collector	Habit	Category Flora DF
Rubiaceae				
Borreria capitata (Ruiz & Pav.) DC.	121089	CP 3608a	Her — Ssh	—
Borreria tenella (Kunth) Cham. & Schltdl.	165351	TN 141	Ssh	—
Chomelia ribesioides Benth. ex A.Gray	106693	MLI 3	Shr	ECe
Declieuxia fruticosa (Willd. ex Roem. & Schult.) Kuntze	106744; 109261	MLI 53; TN 89	Ssh — Shr	—
Palicourea officinalis Mart.	109289	TN 117	Ssh	ECe
Palicourea rigida Kunth	82042; 106717	CP 3593; MLI 26	Shr – small tree	—
Planaltina capitata (K.Schum.) R.M.Salas & E.L.Cabral	84588; 109281	TN 18; TN 109	Ssh	ECe, eGO
Sabicea brasiliensis Wernham	84574; 106739	TN 4; MLI 48	Ssh	—
Tocoyena formosa (Cham. & Schltdl.) K.Schum.	82029; 106710; 109211	CP 3580; MLI 20; MLI 79	Smt	—
Salicaceae				
Casearia sylvestris Sw.	106672; 106691	TN 67; MLI 1	Shr – Smt	—
Sapindaceae				
Serjania cf. *obtusidentata* Radlk.	165346	TN 136	Cre	—
Serjania sp.	82035	CP 3586	NA	—
Smilacaceae				
Smilax goyazana A.DC.	82021; 121095; 106694	CP 3572; CP 3614; MLI 4	Shr	—
Solanaceae				
Cestrum cf. *obovatum* Sendtn.	106735	MLI 44	Ssh	—
Schwenckia americana Rooyen ex L.	109273	TN 101	Ssh	—
Solanum lycocarpum A. St.-Hil.	82016; 106705	CP 3567; MLI 15	Shr – Smt	—
Solanum subumbellatum Vell.	106716	MLI 25	Ssh	—
Solanum viarum Dunal	109208	MLI 76	Shr	—
Styracaceae				
Styrax ferrugineus Nees & Mart.	84581	TN 11	Tre — Smt	ECe
Turneraceae				
Turnera lamiifolia Cambess.	109224	MLI 92	Her	ECe
Turnera longiflora Cambess.	109237	MLI 107	Ssh	ECe
Urticaceae				
Cecropia pachystachya Trécul	—	*	Tre	—
Velloziaceae				
Vellozia squamata Pohl	121087	CP 3606a	Ssh — Shr	ECe
Verbenaceae				
Lippia origanoides Kunt	84575	TN 5	Shr	—
Violaceae				
Pombalia lanata (A.St.-Hill.) Paula-Souza	82014	CP 3565	Her	ECe
Vitaceae				
Cissus erosa Rich.	109199	MLI 67	Cre	—
Vochysiaceae				
Qualea grandiflora Mart.	165339	TN 129	Tre	—
Qualea multiflora Mart.	82024; 84583	CP 3575; TN 13	Tre	—
Vochysia elliptica Mart.	106742; 119023	MLI 51; TN 34	Tre	—
Vochysia thyrsoidea Pohl	165347	TN 137	Tre	—